We CLAIMS

1. Heparin fragments, characterized by 14-18 sugar units, the disaccharide unit L-iduronosyl-2-O-sulphate-N-sulpho-D-glucosamine-6-O-sulphate being the main component, and where unsulphated L-iduronic acid is in a position situated 3-5 sugar units from the unreducing terminal and is followed by a unit selected from the group consisting of N-sulpho-D-glucosamine sulphate and N-acetyl-glucosamine in sulphated and unsulphated form.

2. Heparin fragments having the structure $(U\text{-}G)_n\text{-}I\text{-}G\text{-}(U\text{-}G)_m$ where n is 1 or 2 and m is 5 or 6, I is unsulphated L-iduronic acid, U is L-iduronic acid-2-O-sulphate, and G is N-sulpho-D-glucosamine-6-O-sulphate.

3. Pharmaceutical compositions, characterized in that they comprise heparin fragments having selective anti-coagulation activity and containing 14-18 sugar units, the disaccharide unit L-iduronosyl-2-O-sulphate-N-sulpho-D-glucosamine-6-O-sulphate being the main component, and where unsulphated L-iduronic acid is in a position situated 3-5 sugar units from the unreducing terminal and is followed by a unit selected from the group consisting of N-sulpho-D-glucosamine sulphate and N-acetyl-glucosamine in sulphated and unsulphated form.

4. Pharmaceutical compositions, characterized in that they contain heparin fragments of the structure $(U\text{-}G)_n\text{-}I\text{-}G\text{-}(U\text{-}G)_m$ where n is 1 or 2 and m is 5 or 6, I is unsulphated L-iduronic acid, U is L-iduronic acid-2-O-sulphate and G is N-sulpho-D-glucosamine-6-O-sulphate.

5. A process for the preparation of heparin fragments according to claim 1, characterized by

(a) treating heparin with nitrous acid in dimethoxy-

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ethane and purifying the material obtained, or

(b) periodate-oxidizing heparin at low pH and temperature, respectively, or

(c) partially depolymerizing heparin with heparinase, or

(d) partially depolymerizing heparin by esterification of carboxyl groups and then subjecting the material obtained to alkaline β-elimination, or

(e) partially depolymerizing heparin from partial N-desulphatation and then deaminating the material obtained with nitrous acid.

add Q3